



ROCKETDYNE DIVISION
North American Rockwell Corporation
6633 Canoga Avenue,
Canoga Park, California 91304

Phone - John R. Ulf
(213) 884-2213

8/14/68

IX-5

SATURN HISTORY DOCUMENT
University of Alabama Research Institute
History of Science & Technology Group

DATA SHEET
J-2 ROCKET ENGINE

Date ----- Doc. No. -----

FUNCTION:

Cluster of five will provide a maximum of 1.125 million pounds of thrust for S-II second stage and single engine will provide a maximum of 225,000 pounds thrust for S-IVB stage of Saturn V, and Saturn IB.

THRUST:

225,000 pounds.

SPECIFIC IMPULSE:

424 seconds (minimum).

PROPELLANTS:

Liquid Hydrogen (fuel) and Liquid Oxygen (oxidizer).

COMPONENTS:

Thrust Chamber:

Tubular wall, regeneratively cooled.

Propellant Supply:

Dual, direct-drive turbopumps mounted on opposite side of thrust chamber. Each pump is single shaft unit without gears. Bearings are lubricated by fluid being pumped.

Turbopump Drive:

Fuel rich gas generator supplies driving gas to hydrogen pump turbine and then, in series, to oxygen pump.

DIMENSIONS:

11 feet, 1 inch in length, 6 feet, 8 1/2 inches in width.

HISTORY:

Development program began Sept. 1, 1960. First complete engine was tested Jan. 31, 1962, at Rocketdyne's Santa Susana Field Laboratory. First extended duration test of 510 seconds was made Nov. 27, 1963. First production engine was delivered in April, 1964. First flight in S-IVB stage of the Uprated Saturn I vehicle, Feb. 26, 1966. Second flight in S-IVB stage of Uprated Saturn I vehicle July 5, 1966. Third flight in S-IVB stage of Uprated Saturn I vehicle Aug. 25, 1966. Fourth flight in S-II and S-IVB stages of Apollo 4, Nov. 9, 1967. Qualification testing for manned flight completed in September, 1966.